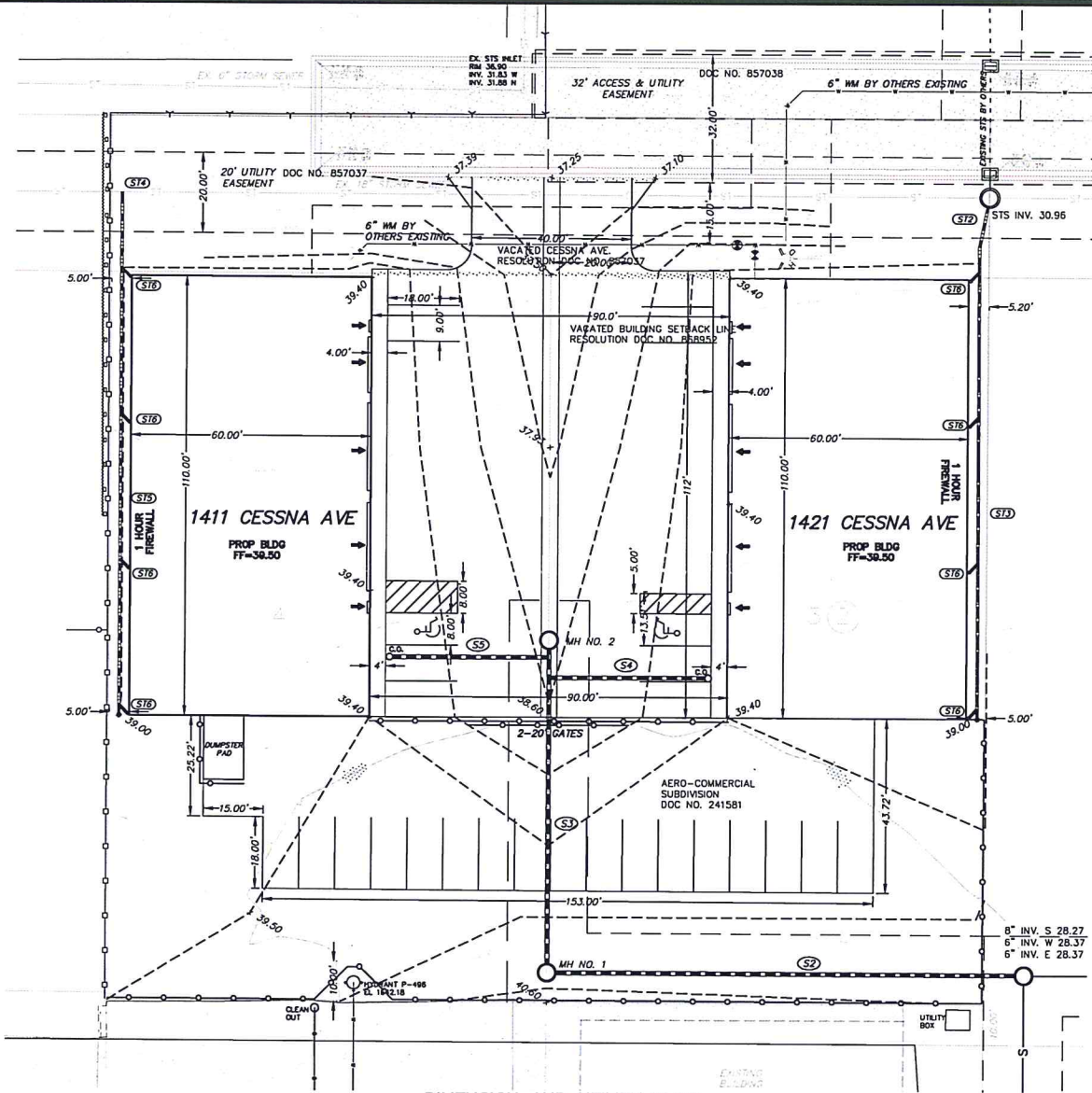
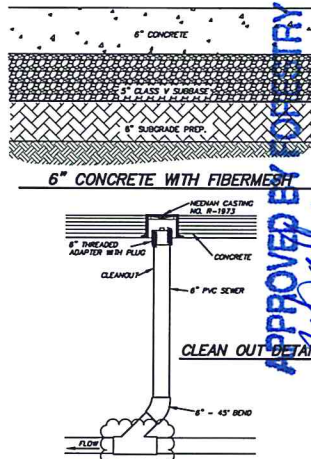


SP 2016-052



DIMENSION AND UTILITY PLAN

- LEGEND**
- EXISTING SANITARY SEWER
 - EXISTING WATERMAIN
 - EXISTING STORM SEWER
 - EXISTING UNDERGROUND ELECTRIC
 - EXISTING UNDERGROUND TELEPHONE
 - EXISTING UNDERGROUND GAS
 - EXISTING UNDERGROUND CABLE TV
 - EXISTING UNDERGROUND FIBER OPTIC
 - EXISTING OVERHEAD POWER
 - EXISTING MANHOLE
 - EXISTING UTILITY RISER/WAULT
 - EXISTING LIGHT-POWER POLE
 - EXISTING SIGN
 - EXISTING VALVE
 - EXISTING FIRE HYDRANT
 - EXISTING ASPHALT
 - EXISTING CONCRETE
 - EXISTING GRAVEL
 - EXISTING CONTOUR
 - EXISTING GRADE
 - PROPOSED SANITARY SEWER
 - PROPOSED WATERMAIN
 - PROPOSED STORM SEWER
 - PROPOSED FENCE
 - PROPOSED VALVE
 - PROPOSED FIRE HYDRANT
 - PROPOSED CONCRETE
 - PROPOSED ASPHALT
 - PROPOSED GRAVEL



CLEAN OUT DETAIL

WATERMAIN

(W1) MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH CITY OF BISMARCK SPECIFICATIONS. ALL BACKFILL SHALL BE 95% OF STANDARD PROCTOR AT RECOMMENDED MOISTURE CONTENT. WATERLINES SHALL BE CHLORINATED, PRESSURE TESTED AND FLUSHED. TESTING IS CONSIDERED INCIDENTAL.

(W2) ALL WATER MAIN AND SERVICE LINES WILL BE INSTALLED BY OTHERS. COORDINATE WITH MECHANICAL CONTRACTOR FOR CONNECTION TO BUILDING.

STORM SEWER

(SD1) MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH CITY OF BISMARCK CONSTRUCTION SPECIFICATIONS. ALL BACKFILL SHALL BE 95% OF STANDARD PROCTOR AT RECOMMENDED MOISTURE CONTENT.

(SD2) CONNECT TO EXISTING MANHOLE, INV. 32.00, AND INSTALL 12.74 LF 8" STORM SEWER @ 1.020% AND 11.25' BEND; INV. 32.13

(SD3) INSTALL 118.00 LF 8" STORM SEWER @ 1.000% AND INLINE NYLOPLAST DRAIN; INV. 33.31.

(SD4) CONNECT TO EXISTING 18" STORM SEWER WITH A 18"x18" INSERT-A-TEE; INV. 30.15.

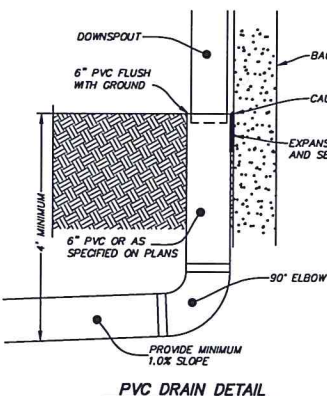
(SD5) INSTALL 130.82 LF 8" STORM SEWER @ 1.001% AND 45' BEND; INV. 31.96.

(SD6) CONNECT TO WYE, INSTALL 3.00 LF 6" STORM SEWER AND 90' BEND; SEE TABLE THIS SHEET FOR INVERTS. INSTALL 6" RISER PIPE FLUSH WITH FINISH GRADE. CONNECT DOWNSPOUT TO RISER PIPE PER DETAIL THIS SHEET.

(SD7) SEE DETAIL FOR INLINE DRAIN ON SHEET C2.0.

WEST STORM SEWER (ST6) WYE STATIONING				
FROM 18"x18" TEE (0+00) TO INLET (1+30.82)				
STATION	DESCRIPTION	LEADER LENGTH	INVERT AT BUILDING	
0+18.97	8"x6" WYE	3.00'	30.90	
0+55.42	8"x6" WYE	3.00'	31.25	
0+91.86	8"x6" WYE	3.00'	31.65	
1+28.31	8"x6" WYE	3.00'	32.00	

EAST STORM SEWER (ST6) WYE STATIONING				
FROM MANHOLE (0+00) TO INLET (1+30.74)				
STATION	DESCRIPTION	LEADER LENGTH	INVERT AT BUILDING	
0+18.90	8"x6" WYE	3.00'	32.25	
0+55.34	8"x6" WYE	3.00'	32.60	
0+79.05	8"x6" WYE	3.00'	32.85	
1+28.27	8"x6" WYE	3.00'	33.35	



PVC DRAIN DETAIL

FENCING NOTES

- (F1) A 6" HIGH CHAIN LINK FENCE SHALL BE INSTALLED ALONG THE PERIMETER OF THE SOUTH AND EAST SIDE OF SITE WHEREVER DEPICTED ON THE PLANS.
- (F2) FENCING SHALL BE INSTALLED 6" INSIDE OF THE PROPERTY LINES UNLESS OTHERWISE NOTED ON THE PLANS.
- (F3) CHAIN LINK FENCE SHALL CONFORM TO THE CITY OF BISMARCK SPECIFICATIONS SECTION 1208 FOR MUNICIPAL PUBLIC WORKS IMPROVEMENTS EXCEPT WHERE MODIFIED HEREIN.
- (F4) THE FENCE SHALL BE INSTALLED WITH A TOP RAIL. ADDITIONALLY, THE WIRE MESH SHALL BE 4" X 4" GALV. STEEL OR EQUIVALENT.
- (F5) CONCRETE FOR POSTS SHALL BE POURED TO GROUND LEVEL AND CROWNED AT THE POST FOR POSITIVE DRAINAGE. FOLLOW THE PROVIDED DETAILS FOR POST DEPTH AND CONCRETE THICKNESS. SEE BISMARCK CONSTRUCTION SPECIFICATIONS.
- (F6) 2 - 20' GATES BETWEEN BUILDINGS SEE DRAWINGS.
- (F7) A 6" HIGH OPAQUE VINYL FENCE SHALL BE INSTALLED WHERE DEPICTED ON THE PLANS TO SCREEN DUMPSTER PAD.

SANITARY SEWER

- (S1) MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH CITY OF BISMARCK CONSTRUCTION SPECIFICATIONS. ALL BACKFILL SHALL BE 95% OF STANDARD PROCTOR AT RECOMMENDED MOISTURE CONTENT. TESTING IS CONSIDERED INCIDENTAL. ONE FOOT OF SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER SERVICES.
- (S2) CONNECT TO EXISTING MANHOLE, INV. 28.37, AND INSTALL 119.68 LF 6" SANITARY SEWER @ 0.6936% AND MANHOLE NO. 1; INV. 29.20 S.
- (S3) INSTALL 83.78 LF 6" SANITARY SEWER @ 0.7162% AND MANHOLE NO. 2; INV. 29.90 S.
- (S4) CONNECT TO 6"x4" WYE AND INSTALL 40.00 LF 4" SANITARY SEWER SERVICE @ 1.2167% AND CLEANOUT; INV. 30.40.
- (S5) CONNECT TO 6"x4" WYE AND INSTALL 40.00 LF 4" SANITARY SEWER SERVICE @ 1.1167% AND CLEANOUT; INV. 30.40.
- (S6) COORDINATE WITH MECHANICAL CONTRACTOR FOR CONNECTION TO BUILDING.

APPROXIMATE WYE LOCATIONS (6"x4")	
STATION	DIRECTION
0+74.0	E
0+75.0	W

PAVEMENT MARKING AND STRIPING

ALL NON-ADA STRIPING SHALL BE 4 INCHES WIDE NON REFLECTORIZED YELLOW PAINT MEETING THE REQUIREMENTS OF MASHTO W28 APPLIED AT A RATE OF 110 SQUARE FEET PER GALLON.

ADA STRIPING FOR LANES AND SYMBOLS SHALL BE BLUE PAINT MEETING THE REQUIREMENTS OF MASHTO W28 APPLIED AT A RATE OF 110 SQUARE FEET PER GALLON. PAINT FACE AND TOP OF CURB (6 INCHES WIDE) IN FRONT OF ALL ADA PARKING STALLS.

JOINT DETAILS

ISOLATION JOINTS SHALL BE SEALED USING A ONE PART POLYURETHANE TYPE SEALANT SUCH AS "SONOLASTIC N.P." AS MADE BY SONNELLO BUILDING PRODUCTS DIVISION OR "SKAFLEX-1A" AS MADE BY Sika Chemical Corp. OR "DYMATROL 1" AS MADE BY PERCORA CORP. OR A ONE PART SILICONE HIGHWAY AND PAVEMENT SEALANT SUCH AS SPECTREM 800/900SL AS MADE BY TREMCO OR PERCORA 301 NS AS MADE BY PERCORA CORP. OR EQUIV.

JOINT SPACING SHALL TYPICALLY BE SPACED AT 1 1/2" TIMES THE THICKNESS OF THE PAVEMENT (MEASURED IN INCHES) IN FEET (4" SIDEWALK EQUALS 6 FOOT SPACING). IN NO CASE SHALL THE JOINT SPACING EXCEED TWO TIMES THICKNESS.

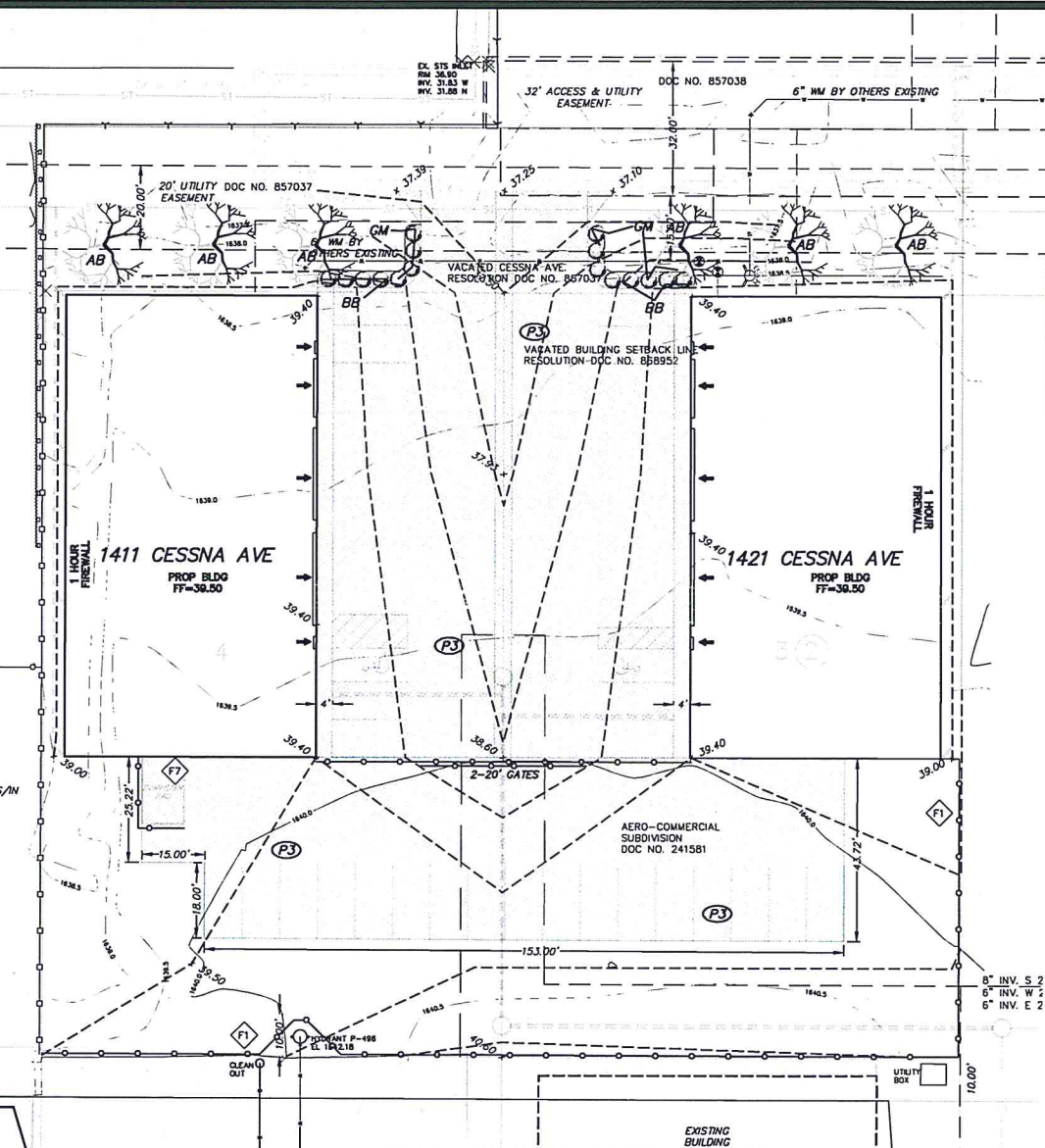
SEAL EXPANSION JOINTS SIMILAR TO ISOLATION JOINTS. (EXP. JT.)

PAVEMENT

- (P1) ALL AREAS RECEIVING PAVING SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, OR ANY UNSUITABLE MATERIAL. WET OR DRY MATERIAL SHOULD BE REMOVED OR MOISTURE CONDITIONED AND RECOMPACTED. SOFT, DRY AND LOW DENSITY SOIL SHOULD BE REMOVED OR COMPACTED IN PLACE PRIOR TO PLACING FILL.
- (P2) ON SITE EXTERIOR CONCRETE MATERIALS AND CONSTRUCTION MATERIALS SHALL CONFORM TO CITY OF BISMARCK SPECIFICATIONS EXCEPT AS MODIFIED HEREIN. AIR CONTENT SHALL BE 5% TO 7% STRENGTH AT 28 DAYS SHALL BE 4000 PSI.
- (P3) 6" FIBER MESH CONCRETE OVER 5" CLASS V BASE. - SEE DETAIL THIS SHEET.

PLANT PALETTE

SYM.	COMMON NAME	SCIENTIFIC NAME	SIZE	QNTY.
AB	AUTUMN BLAZE MAPLE	Acer x freemanii 'Jeffersred'	1 1/2" Cal.	6
BB	CRIMSON PYGMY BARBERRY	Berberis thunbergii 'Crimson Pygmy'	2 Gallon	8
GM	GOLDMOUND SPIREA	Spiraea japonica 'Goldmound'	2 Gallon	8



GRADING, PAVING AND LANDSCAPE PLAN

SHRUB/PERENNIAL PLANTING DETAIL

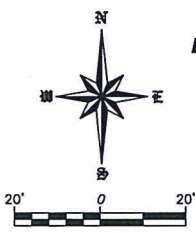
TYPICAL FOR ALL SHRUBS AND PERENNIALS

SANITARY SEWER MANHOLE SCHEDULE

Inlet/Manhole Number	MH #1	MH #2
Manhole/Inlet Size	48"	48"
Casting Type	MENARD R-1725 W/ BLUE COAT	MENARD R-1725 W/ BLUE COAT
Rim Elev.	40.40	38.35
Top P.C. Section	39.36	37.31
Invert Elev. (a)	29.20	29.90
Invert Elev. (b)	29.30	--
Length of P.C.	10.16	7.41

TREE PLANTING DETAIL

TYPICAL FOR ALL DECIDUOUS, SINGLE-TRUNK TREES



FOR REGULATORY REVIEW ONLY - NOT FOR CONSTRUCTION

DATE	4/26/18
REVISIONS	
CITY COMMENTS	

SITE PLAN

LOTS 3 & 4 LESS THE SOUTH 10' AND THE SOUTH 40' OF VACATED CESSNA AVENUE AERO COMMERCIAL SUBDIVISION BISMARCK, NORTH DAKOTA

SWENSON, HAGEN & COMPANY P.C.
509 Basin Avenue
Bismarck, North Dakota 58501
Phone (701) 223-2600
Fax (701) 223-2606
Surveying
Land Planning
Civil Engineering
Landscape & Site Design
Construction Management



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CHECK BY: JP
DATE: 4/10/18
COMPUTER FILE:
P:\BISMARCK\AERO-COMMERCIAL\3&4 SITE PLAN.dwg

SHEET
C3.0

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